

An Investigation of Water Quality above, below, and within Iron Gate Reservoir during the Fall of 2004.

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Presented on February 8th and 9th, 2005
Klamath River Water Quality Coordination Meeting
Yreka, CA

Abstract

An investigation of the implications of a fall turnover event of Iron Gate Reservoir on downstream water quality was performed in 2004. Monitoring above and below the reservoir continuously collected water temperature, specific conductance, pH and dissolved oxygen concentrations along with weekly grab samples for select nutrients. Vertical profiles within the reservoir were performed twice at five locations to identify changes in water quality conditions at depths up to 100'. Nutrient grab samples were also performed within the epilimnion and hypolimnion at the downstream most reservoir location at these times.

Results indicated that the water within the hypolimnion likely mixed slowly with the epilimnion as the study period progressed. Mixing is initiated as warmer surface waters cool due to ambient air and inflow temperatures decreasing. Nutrient levels of the hypolimnion were higher than the epilimnion for most of the parameters tested. Nutrient levels of most parameters above and below the reservoir showed a decline over time, excluding nitrate which increased. Levels of ammonia and BOD were at higher levels than normally seen and warrant further study to understand seasonal nutrient cycling relationships outside the traditional study period. A detailed report from this study will be posted this spring on the Arcata Fish and Wildlife Service's website:

<http://arcata.fws.gov/fisheries>. Future sampling to evaluate turnover of all Klamath reservoirs should be undertaken as a complete study to determine the timing and effects of all impacts to the downstream fisheries resources of the Klamath River.

